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PTO/SB/05 (12/97)

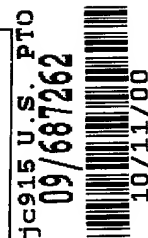
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Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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### UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No. 004860.P2525XTotal Pages 2First Named Inventor or Application Identifier Abraham S. FaragExpress Mail Label No. EL627465446US

**ADDRESS TO:** Assistant Commissioner for Patents  
Box Patent Application  
Washington, D. C. 20231

#### APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. X Fee Transmittal Form  
(Submit an original, and a duplicate for fee processing)
2. X Specification (Total Pages 16)  
(preferred arrangement set forth below)
  - Descriptive Title of the Invention
  - Cross References to Related Applications
  - Statement Regarding Fed sponsored R & D
  - Reference to Microfiche Appendix
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings (if filed)
  - Detailed Description
  - Claims
  - Abstract of the Disclosure
3. X Drawings(s) (35 USC 113) (Total Sheets 8)
4. X Oath or Declaration (Total Pages 4)(Unsigned)
  - a.      Newly Executed (Original or Copy)
  - b.      Copy from a Prior Application (37 CFR 1.63(d))  
(for Continuation/Divisional with Box 17 completed) (**Note Box 5 below**)
  - i.      DELETIONS OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
5.      Incorporation By Reference (useable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6.      Microfiche Computer Program (Appendix)

09/687262-10/11/00

7. ☐ Nucleotide and/or Amino Acid Sequence Submission  
(if applicable, all necessary)  
a. ☐ Computer Readable Copy  
b. ☐ Paper Copy (identical to computer copy)  
c. ☐ Statement verifying identity of above copies

**ACCOMPANYING APPLICATION PARTS**

8. ☒ Assignment Papers (cover sheet & documents(s))  
9. ☐ a. 37 CFR 3.73(b) Statement (where there is an assignee)  
☐ b. Power of Attorney  
10. ☐ English Translation Document (if applicable)  
11. ☐ a. Information Disclosure Statement (IDS)/PTO-1449  
☐ b. Copies of IDS Citations  
12. ☐ Preliminary Amendment  
13. ☒ Return Receipt Postcard (MPEP 503) (Should be specifically itemized)  
14. ☐ a. Small Entity Statement(s)  
☐ b. Statement filed in prior application, Status still proper and desired  
15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)  
16. ☒ Other: Express Certificate of Mailing

17. If a **CONTINUING APPLICATION**, check appropriate box and supply the requisite information:  
☐ Continuation ☐ Divisional ☒ Continuation-in-part (CIP)  
of prior application No: 09/482,152

**18. Correspondence Address**

☐ Customer Number or Bar Code Label \_\_\_\_\_  
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or

☒ Correspondence Address Below

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12/01/97

**FEE TRANSMITTAL FOR FY 2001****TOTAL AMOUNT OF PAYMENT (\$)** 750.00**Complete if Known:****Application No.** Not yet assigned**Filing Date** Herewith**First Named Inventor** Abraham S. Farag**Group Art Unit** Not yet assigned**Examiner Name** Not yet assigned**Attorney Docket No.** 004860.P2525X**METHOD OF PAYMENT (check one)**

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

**Deposit Account Number** 02-2666**Deposit Account Name** \_\_\_\_\_

- ☒ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

2. ☒ **Payment Enclosed:**

☒ **Check**☐ **Money Order**☐ **Other****FEE CALCULATION****1. BASIC FILING FEE**

<u>Large Entity</u>		<u>Small Entity</u>		<u>Fee Description</u>	<u>Fee Paid</u>
<u>Fee Code</u>	<u>Fee (\$)</u>	<u>Fee Code</u>	<u>Fee (\$)</u>		
101	710	201	355	Utility application filing fee	<u>710.00</u>
106	320	206	160	Design application filing fee	_____
107	490	207	245	Plant filing fee	_____
108	710	208	355	Reissue filing fee	_____
114	150	214	75	Provisional application filing fee	_____

**SUBTOTAL (1)** \$ 710.00**2. EXTRA CLAIM FEES**

		<u>Extra Claims</u>	<u>Fee from below</u>	<u>Fee Paid</u>
<b>Total Claims</b>	<u>16</u>	- 20** = <u>0</u>	X _____ = <u>0</u>	
<b>Independent Claims</b>	<u>3</u>	- 3** = <u>0</u>	X _____ = <u>0</u>	
<b>Multiple Dependent</b>			_____ = _____	

**\*\*Or number previously paid, if greater; For Reissues, see below.**

<u>Large Entity</u>		<u>Small Entity</u>		<u>Fee Description</u>
<u>Fee Code</u>	<u>Fee (\$)</u>	<u>Fee Code</u>	<u>Fee (\$)</u>	
103	18	203	9	Claims in excess of 20
102	80	202	40	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	80	209	40	**Reissue independent claims over original patent
110	18	210	9	**Reissue claims in excess of 20 and over original patent

**SUBTOTAL (2)** \$ 0.00

# FEE CALCULATION (continued)

## 3. ADDITIONAL FEES

<u>Large Entity</u>		<u>Small Entity</u>		<u>Fee Description</u>	<u>Fee Paid</u>
<u>Fee Code</u>	<u>Fee (\$)</u>	<u>Fee Code</u>	<u>Fee (\$)</u>		
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for response within first month	
116	390	216	195	Extension for response within second month	
117	890	217	445	Extension for response within third month	
118	1,390	218	695	Extension for response within fourth month	
128	1,890	228	945	Extension for response within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive unavoidably abandoned application	
141	1,240	241	620	Petition to revive unintentionally abandoned application	
142	1,240	242	620	Utility issue fee (or reissue)	
143	440	243	220	Design issue fee	
144	600	244	300	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	40.00
146	710	246	355	For filing a submission after final rejection (see 37 CFR 1.129(a))	
149	710	249	355	For each additional invention to be examined (see 37 CFR 1.129(b))	
179	710	279	355	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	
Other fee (specify) _____					
Other fee (specify) _____					

**SUBTOTAL (3) \$ 40.00**

\*Reduced by Basic Filing Fee Paid

## SUBMITTED BY:

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Signature:  Date: 10/11/00

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JC915 U.S. PTO  
09/687262  
10/11/00

## EXPRESS MAIL CERTIFICATE OF MAILING

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Serial/Receipt No. 004860 P2525X Not yet assigned Filing/Issue Date 10-11-00 Applicant Apple Computer, Inc.

Title COMPUTER MOUSE HAVING SIDE AREAS TO MAINTAIN A DEPRESSED BUTTON POSITION

BSIZ File No. 004860 P2525X Attorney/Agent Initials ACC/jaa

Date Mailed 10-11-00 Docket Due Date 10-11-00

The following has been received in the U.S. Patent & Trademark Office on the date stamped hereon:

<input checked="" type="checkbox"/> Application/Response (____ pgs.)	<input checked="" type="checkbox"/> Express Mail <u>EL627465446US</u> <input checked="" type="checkbox"/> Check No. <u>38275</u>
<input checked="" type="checkbox"/> Appeal Brief (____ pgs.) (in triplicate)	<input checked="" type="checkbox"/> Extension of Time <u>10-11-00</u> <input checked="" type="checkbox"/> Amt: <u>\$710.00</u>
<input checked="" type="checkbox"/> Application - Utility (____ pgs., with cover and abstract)	<input checked="" type="checkbox"/> International Search Report & PTO 440 (____ pgs.) <input checked="" type="checkbox"/> Check No. <u>38276</u>
<input checked="" type="checkbox"/> Application - Rule 1.53(b) Continuation (____ pgs.)	<input checked="" type="checkbox"/> Issue Fee Transmittal <input checked="" type="checkbox"/> Amt: <u>\$40.00</u>
<input checked="" type="checkbox"/> Application - Rule 1.53(b) Divisional (____ pgs.)	<input checked="" type="checkbox"/> Notice of Appeal
<input checked="" type="checkbox"/> Application - Rule 1.53(b) CIP (____ pgs.)	<input checked="" type="checkbox"/> Petition for Extension of Time
<input checked="" type="checkbox"/> Application - Rule 1.53(d) CPA Transmittal (____ pgs.)	<input checked="" type="checkbox"/> Petition for
<input checked="" type="checkbox"/> Application - Design (____ pgs.)	<input checked="" type="checkbox"/> Postcard
<input checked="" type="checkbox"/> Application - PCT (____ pgs.)	<input checked="" type="checkbox"/> Power of Attorney (____ pgs.)
<input checked="" type="checkbox"/> Application - Provisional (____ pgs.)	<input checked="" type="checkbox"/> Preliminary Amendment (____ pgs.)
<input checked="" type="checkbox"/> Assignment and Cover Sheet	<input checked="" type="checkbox"/> Reply Brief (____ pgs.)
<input checked="" type="checkbox"/> Certificate of Mailing	<input checked="" type="checkbox"/> Response to Notice of Missing Parts
<input checked="" type="checkbox"/> Declaration & POA (____ pgs.) (unsigned)	<input checked="" type="checkbox"/> Small Entity Declaration for Indep. Inventor/Small Business
<input checked="" type="checkbox"/> Disclosure Document & Copy of Invention Signed Letter (____ pgs.)	<input checked="" type="checkbox"/> Transmittal Letter, in duplicate
<input checked="" type="checkbox"/> Drawings: <u>8</u> of sheets includes <u>8</u> figures	<input checked="" type="checkbox"/> Fee Transmittal, in duplicate
<input checked="" type="checkbox"/> Other	

UNITED STATES PATENT APPLICATION

for

**COMPUTER MOUSE HAVING SIDE AREAS TO MAINTAIN  
A DEPRESSED BUTTON POSITION**

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File No.: 4860.P2525X

"Express Mail" mailing number: EL627465446US

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Julie Arango  
(Signature of person mailing paper or fee)

10-11-00  
(Date signed)

# COMPUTER MOUSE HAVING SIDE EARS

## 5 CLAIM OF PRIORITY

This application is a continuation-in-part of commonly assigned United States Patent Application Serial No. 09/482,152, filed January 12, 2000, entitled "Cursor Control Device Having An Integral Top Member" by Farag et al.

10

## BACKGROUND OF THE INVENTION

### Field of the Invention

The present invention relates generally to cursor control devices for use in conjunction with a computer system.

### Background Information

Cursor control devices exist in a number of forms, such as joysticks, trackballs, styli and pads, and mice. The computer mouse has been and continues to be a widely used cursor control device. A typical mouse has a body which houses a captured ball, a portion of which extends from the interior of the body. A typical mouse is moved over a flat surface such that the captured ball is in contact with the surface and rolls along the surface in the same direction as the mouse body. The movement of the ball generates two-dimensional data input for corresponding cursor control, the results of which are visible on a display device of the computer. Instead of using a captured ball, a mouse may use optical electronics to generate cursor control signals. A typical mouse also includes an electro-mechanical switch configured in the form of a clicking button disposed on and flush with the top surface of the mouse. This button is used for various functions, such as data selection and command execution. For example, a user moves the mouse over a surface to cause a corresponding movement of a

displayed cursor. A subsequent “single-click” or “double-click” of the button sends an application execution signal to the computer.

Although a mouse button may take various forms, a typical mouse button is disposed near the top and front portion of the mouse where it is easily accessible by a user’s fingers. The user’s palm typically covers the top and back portion of the mouse such that at least one of the user’s fingers (e.g., index finger, middle finger, ring finger) is disposed over the mouse button. Such a button configuration has become commonplace. However, having a separate button located at the front of a mouse can be uncomfortable for those with very large hands, very small hands or deformed hands.

Thus, it is desirable to provide a mouse that may be used easily by users having different hand sizes and/or different degrees of coordination.



## **SUMMARY OF THE INVENTION**

The present invention provides a computer mouse having a base member which includes hold regions. A top member is pivotally coupled to the base member, and the top member has a main surface which is configured to leave the hold regions

5 substantially exposed. The top member forms an integral housing and button.

Additional features and benefits of the present invention will become apparent upon review of the following description.

## **BRIEF DESCRIPTION OF THE DRAWINGS**

Various embodiments of the present invention will be described in detail with reference to the following drawings. The present invention is illustrated by way of example and not limitation in the accompanying figures.

5

**Figure 1** is a simplified view of a computer mouse in accordance with the teachings of the present invention.

**Figure 2** is a simplified and “de-coupled” view of a computer mouse in accordance with the teachings of the present invention.

10

**Figure 3A** is a perspective view of a computer mouse having hold regions in accordance with the teachings of the present invention.

**Figure 3B** is a side view of the computer mouse shown in Figure 3A.

**Figure 4** is an exploded view of a computer mouse having hold regions.

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**Figure 5** is a close-up view of different components of the computer mouse shown in Figure 4.

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**Figure 6** is another close-up view of different components of the computer mouse shown in Figure 4.

**Figure 7** is yet another close-up view of different components of the computer mouse shown in Figure 4.

## **DETAILED DESCRIPTION**

The following description provides embodiments of the present invention. However, it will be appreciated that other embodiments of the present invention will become apparent to those of ordinary skill in the art upon examination of this  
5 description. Thus, the present description and accompanying drawings are for purposes of illustration and are not to be used to construe the invention in a restrictive manner.

**Figures 1 and 2** illustrate two views of a computer mouse 10 which includes a top member 15, a base member 17 and a printed circuit board (PCB) member 19. Top member 15 and base member 17 together form the housing of mouse 10. In one embodiment, portions of top member 15 and base member 17 are translucent to provide views of the internal electronics of mouse 10. It should be noted that, for the purpose of clarity, not all of the internal components of mouse 10 are shown. Furthermore, it is appreciated that mouse 10 may use a mechanical system (e.g., captured ball) or an optical system to generate cursor control signals. An electrical connector 20, such as a universal serial bus (USB) connector, is used to connect mouse 10 to a computer system (not shown). A cable 23 connects electrical connector 20 to the internal electronics that are mounted on PCB member 19 through a front portion 25 of top member 15. PCB member 19 includes indents 30 which engage pins 32 extending upward from base member 17 to ensure that PCB member 19 is seated securely on base member 17.

Top member 15 has two protrusions 27 which extend within the cavity of top member 15. Protrusions 27 pivotally engage snap mechanisms 29 which extend up from base member 17. When protrusions 27 engage snap mechanisms 29, top member 15 may be depressed toward base member 17 with top member 15 pivoting at the joints formed by protrusions 27 and snap mechanisms 29. When top member 15 and base member 17 are coupled as such, the body of mouse 10 is formed and the

internal electronics of mouse 10 are enclosed. A biased spring pad 26 pushes top member 15 away from base member 17 to an “un-clicked” or neutral position by pressing up against tab 55 of top member 15. This position may be defined and delimited by the configuration and action of protrusions 27 and snap mechanisms 29.

5 As a user depresses top member 15 to click for data selection or command execution, an elongated member 33 engages an electrical switch 35 mounted on PCB member 19 to effect a mouse click action. Elongated member 33 is located on the inner surface of top member 15 or of an inner housing of top member 15 (see inner housing 90 of Figure 4, for example). During the mouse click action, elongated member 33 is pushed against electrical switch 35 and, accordingly, top member 15 is in a “clicked” or depressed position.

10 It should be particularly noted that top member 15 serves as an integral housing and button. Thus, top member 15 is both a top housing of mouse 10 and a button of mouse 10. Having an all-in-one top housing and button eliminates the need to have a separate button, such as those found on a conventional computer mouse. Because top member/button 15 is an integral piece, a user may push down on numerous points on the surface area of top member/button 15 to effect a clicking action. Specifically, any point on the surface of top member/button 15 above the joint area formed by protrusions 27 engaging snap mechanisms 29 may be pushed down to engage  
15 elongated member 33 with electrical switch 35.  
20

During a typical session for a mouse user, it may be necessary for the user to lift the mouse during a “click-and-drag” operation. For example, if a user is moving the mouse on a mouse pad while keeping a button clicked and reaches an edge of the pad, the user must lift and reposition the mouse to a different part of the pad in order to  
25 continue the click-and-drag operation. Even if a user is moving the mouse on a large surface area (e.g., a desktop) during a click-and-drag operation, it may be more convenient and more comfortable to lift and reposition the mouse rather than perform a

continuous physical “drag.” To perform a drag, a user must keep a mouse button depressed (e.g., in a clicked position) while moving the mouse across a surface. If a user needs to or desires to lift the mouse in the middle of a drag, the user must continue to depress the mouse button while lifting the mouse.

5           The embodiment of the present invention shown in **Figures 3A** and **3B** is a single-button mouse 60 which includes hold areas or side ears 70 to allow a user to lift the mouse 60 while maintaining the mouse button 65 in a clicked position. Mouse button 65 is an integral button and housing similar to top member/button 15. Although only one hold area 70 is shown, it is appreciated that mouse 60 typically has at least two hold areas 70 on opposite sides of mouse 60. Mouse button/housing 65 may be depressed by pushing down on any point along the majority of the surface area of mouse button/housing 65. Mouse button/housing 65 pivots at a point near the bottom area (e.g., closer to user) of mouse 60, as described above in conjunction with **Figures 1** and **2**. In one embodiment, hold areas 70 are tabs which extend substantially vertically from a base member 75. Hold areas 70 may be integrally formed with or attached to base member 75. Openings or cutouts 72 in mouse button/housing 65 are shaped to accommodate hold areas 70 and leave them exposed. The surface of hold areas 70 is typically flush with the surface of mouse button/housing 65.

Because hold areas 70 are fixed and substantially rigid, a user may hold onto hold areas 70 to keep mouse button/housing 65 depressed while lifting mouse 60. For example, a user may use her index finger and/or middle finger to depress mouse button/housing 65 while using her thumb and ring finger to concurrently grasp hold areas 70. Thus, hold areas 70 allow a user to reposition mouse 60 in the middle of a “click and drag” operation.

25           **Figure 4** illustrates an exploded view of a computer mouse having hold regions 130a and 130b. A top housing 85, which is an integral housing and button, is disposed over an inner housing 90. In one embodiment, top housing 85 and inner housing 90

are made of a translucent material such that the interior of the mouse is visible.

Although inner housing 90 is not strictly necessary, it does provide an additional visual layer for the computer mouse of the present invention. If inner housing 90 is included, then top housing 85 presses down on inner housing 90, which, in turn, presses down on an electrical switch to effect a mouse click. A cage 95 is placed over a light barrier label 100 and a LED holder 105. LED holder 105 also secures substrate 110. Cage 95 has through holes which mate with protrusions on a base member 125 to secure cage 95. ? 105 is coupled to a substrate 110 which is disposed over a force adjustment plate 115. Optical component 120 includes a lens for tracking a LED. Base member 125 has hold regions 130a and 130b which extend vertically from opposing edges of base member 125. Hold regions 130a and 130b fit into corresponding openings or cutouts 87 in top housing 85 such that they are accessible by a user's fingers.

An adjustment dial 135 is rotatably coupled to base member 125. Adjustment dial 135 is used to decrease or increase the force required to push down on top housing 85 in order to effect a mouse click. An alignment member 140 is disposed below base member 125 and has vertically extending pins which are used to secure and align force adjustment plate 115 and base member 125. It should be noted that alignment member 140 is open in the middle such that the bottom of base member 125 is exposed. Alignment member 140 may be made of a material which facilitates movement of the mouse over a mouse pad or other working surface. A border 145 is disposed around alignment member 140.

**Figures 5, 6 and 7** illustrate more detailed views of the components (except member 145) shown in **Figure 4**. Top housing 85 has openings or cutouts 87 which accommodate hold regions 130a and 130b. Although only one opening 87 is shown, it is appreciated that top housing 85 has two openings 87, one on each side of top housing 85. In the embodiments shown in the figures, openings 87 do not extend entirely through the wall of top housing 85. Instead, openings 87 extend partially

through the wall of top housing 85 to an inner wall 88. A gap below the bottom edge of inner wall 88 accommodates a flange portion 132 of hold regions 130a and 130b.

Openings 87 may be shaped to match the shape of hold regions 130a and 130b. It should be noted that openings 87 are large enough to allow top housing 85 to be “clicked” without any substantial interference between the arc of opening 87 and the top edge of hold regions 130a and 130b. An inner housing 90 is covered by top housing 85 and has cutouts 91 (e.g., on opposing sides of inner housing 90) and 93. Cutouts 91 are aligned with openings 87 to accommodate flange portion 132 of hold regions 130a and 130b. Cutout 93 accommodates cables which are coupled to the internal electronics of the mouse.

Cage 95 has through holes 96a and 96b which mate with protrusions 127a and 127b, respectively, extending from base member 125 to hold cage 95 in place. Light barrier label 100 and LED holder 105 are located underneath cage 95. LED holder 105 is coupled to substrate 110.

Force adjustment plate 115 has a flange 116 which is formed with through holes 118a, 118b. Pins 141a, 141b extending vertically from alignment member 140 are disposed through through holes 118a and 118b, respectively. Thus, adjustment plate 115 may be held in place and aligned relative to base member 125 and alignment member 140. Pins 141a, 141b and 142 of alignment member 140 also engage through holes 131 of base member 125 to secure base member 125 and ensure proper alignment among adjustment plate 115, base member 125 and alignment member 140. Adjustment plate 115 also includes a center opening 117 to accommodate optical component 120, two tabs 121a, 121b which extend downward from the rim of opening 117, and a spring pad 119. Tabs 121a, 121b are located along the rim of opening 117 approximately 180 degrees apart from each other. Substrate 110 is seated on top of flange 116 under hooks 199. A tab of top housing 85, such as tab 55 shown in **Figure 2**, is seated on spring pad 119 through the underside of a bridge 129 of base member

125. The clamping of adjustment plate 115 toward base member 125 causes spring pad 119 to flex upward and push the tab of top housing 85, which in turn biases top housing 85 to an “un-clicked” or neutral position. The upward flexing of the spring pad-tab combination is limited by bridge 129 of base member 125. It should be noted that top housing 85 includes internal pivots, such as protrusions 27 shown in **Figure 1**, which pivotally engage connectors 126a and 126b. Connectors 126a and 126b may be formed with through holes or concavities (as shown) which engage the internal pivots of top housing 85.

Adjustment dial 135 is rotatably disposed onto base member 125 via opening 128, which also accommodates optical component 120. Adjustment dial 135 has two stubs 136 located approximately 120 degrees (or 240 degrees) apart along the rim of adjustment dial 135. In one embodiment, force adjustment plate 115 and adjustment dial 135 are capable of defining three user-adjustable positions. In a first position, neither of stubs 136 touches either of tabs 121a, 121b. Thus, the combination of pins 141a, 141b and through holes 118a, 118b effectively forms a first fulcrum point for the action of force adjustment plate 115. In a second position, one stub 136 is positioned immediately underneath tab 121a, thereby forming a second fulcrum point for the action of force adjustment plate 115. The second fulcrum point increases the force required to “click” top housing 85 because the second fulcrum point is closer than the first fulcrum point to spring pad 119. In a third position, one stub 136 is positioned immediately underneath tab 121b, thereby forming a third fulcrum point for the action of force adjustment plate 115. The third fulcrum point further increases the force required to click top housing 85 because of its proximity to spring pad 119.

It should be noted that top housing 85 generally requires the same amount of downward force for the initial portion of a downward clicking action. Subsequently, the force required to depress top housing 85 through the remaining portion of the downward clicking action varies depending on the previously described fulcrum points.



For example, the initial portion may be 1/10 of a millimeter and the remaining portion may be 9/10 of a millimeter.

A force adjustment feature provides more comfortable mouse usage for a variety of users. Some users desire more resistance to mouse clicks, while other users desire less resistance to mouse clicks. However, it is appreciated that it is not necessary to use a force adjustment feature in conjunction with the hold regions of the present invention. The hold regions allow a user to continue a click-and-drag operation by lifting and repositioning the mouse while maintaining the mouse button in a clicked position. Thus, a mouse having an integral housing and button as described herein may be used more effectively.

In the foregoing detailed description, the apparatus and method of the present invention have been described with reference to specific exemplary embodiments. However, it will be evident that various modifications and changes may be made without departing from the broader scope and spirit of the present invention. The present specification and figures are accordingly to be regarded as illustrative rather than restrictive.

## **CLAIMS**

What is claimed is:

- 1 1. A computer mouse comprising:  
2 a base member having hold regions;  
3 a top member pivotally coupled to said base member, said top member having a  
4 main surface configured to leave said hold regions substantially exposed;  
5 wherein said top member forms an integral housing and button.
- 2 2. The computer mouse of claim 1, wherein said top member does not include a  
separate button.
- 3 3. The computer mouse of claim 1, wherein said hold regions allow said top  
4 member to be maintained in a clicked position when the computer mouse is removed  
5 from a surface.
- 1 4. The computer mouse of claim 1, wherein said hold regions are substantially flush  
2 with said main surface of said top member.
- 1 5. The computer mouse of claim 1, wherein said hold regions comprise first and  
2 second vertically extending tabs.
- 1 6. The computer mouse of claim 5, wherein said first and second vertically  
2 extending tabs are integrally formed with said base member.

1 7. The computer mouse of claim 5, wherein said top member comprises first and  
2 second openings shaped to accommodate said first and second vertically extending  
3 tabs, respectively.

1 8. The computer mouse of claim 5, wherein said first and second vertically  
2 extending tabs are located on opposite sides of said base member.

1 9. A computer mouse comprising:

2 a first side ear;

3 a second side ear;

4 wherein said first and second side ears are concurrently graspable to lift the  
5 computer mouse while maintaining a button of the computer mouse in a depressed  
6 position, wherein said button is a top housing of the computer mouse.

1 10. The computer mouse of claim 9, wherein said first and second side ears are  
2 substantially rigid.

1 11. The computer mouse of claim 9, wherein said first and second side ears are  
2 capable of accommodating a user's thumb and one of a user's other fingers,  
3 respectively.

1 12. The computer mouse of claim 9, wherein said first and second side ears extend  
2 from a base.

1 13. The computer mouse of claim 12, wherein said first and second side ears are  
2 located on opposite sides of said base.

1 14. A computer mouse comprising:  
2 a base having a first fixed portion and a second fixed portion;  
3 a depressable housing coupled to said base such that said base is covered by  
4 said housing;  
5 wherein said first and second fixed portions are accessible through said  
6 depressable housing when said depressable housing is depressed.

1 15. The computer mouse of claim 14, wherein not all of said depressable housing is  
2 depressable.

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16. The computer mouse of claim 14, wherein said first and second fixed portions  
and said depressable housing are capable of being held concurrently to lift the  
computer mouse off a surface.

## **ABSTRACT OF THE DISCLOSURE**

A computer mouse having a base member with hold regions. A top member is pivotally coupled to the base member and covers the internal electronics of the mouse.

The top member has a main surface with openings to accommodate the hold regions of

5 the base member and leave them exposed to a user's fingers. The top member also acts as a button for the mouse. The hold regions allow a user to lift the mouse while maintaining the top member in a depressed position.

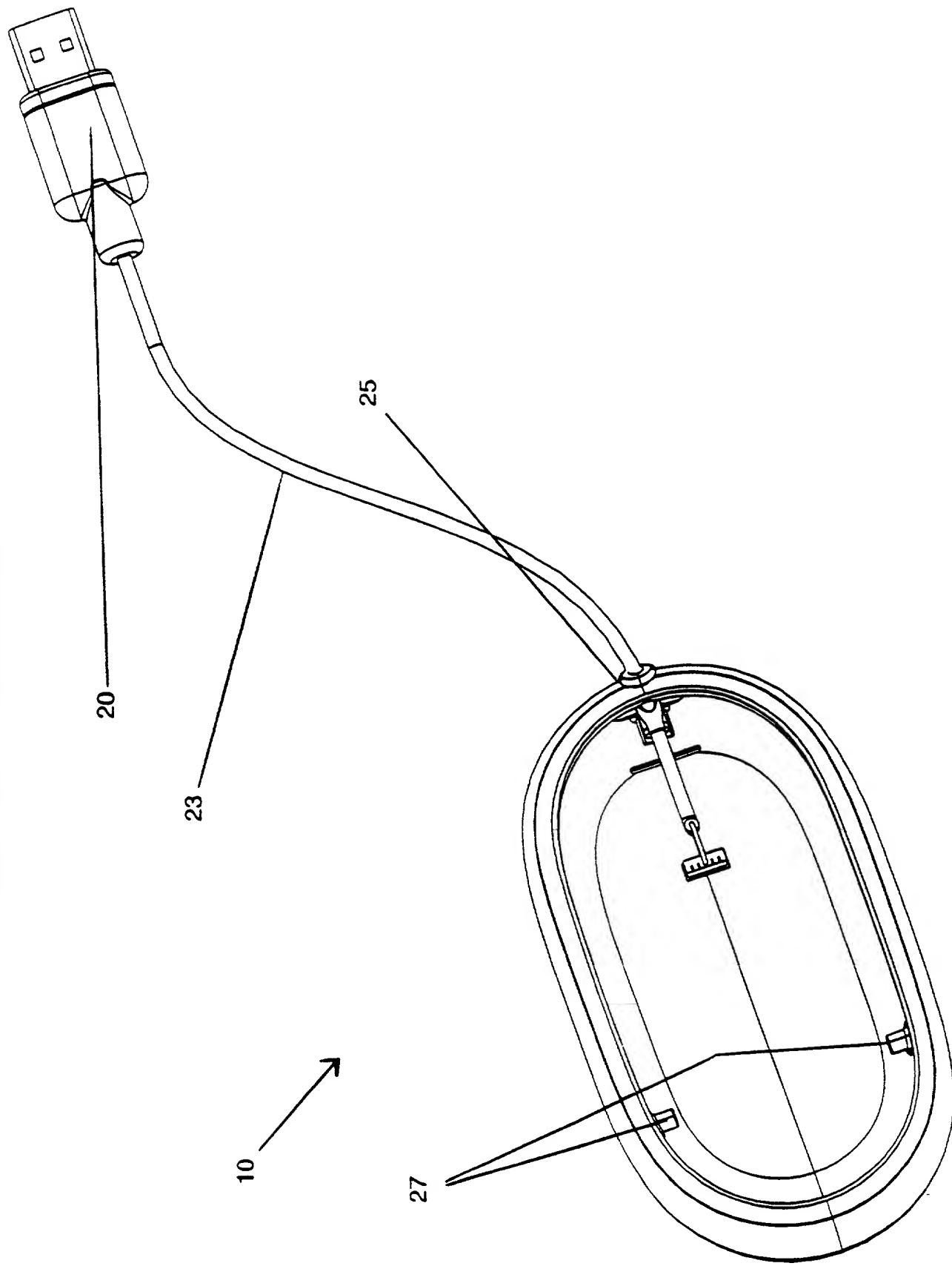


Figure 1

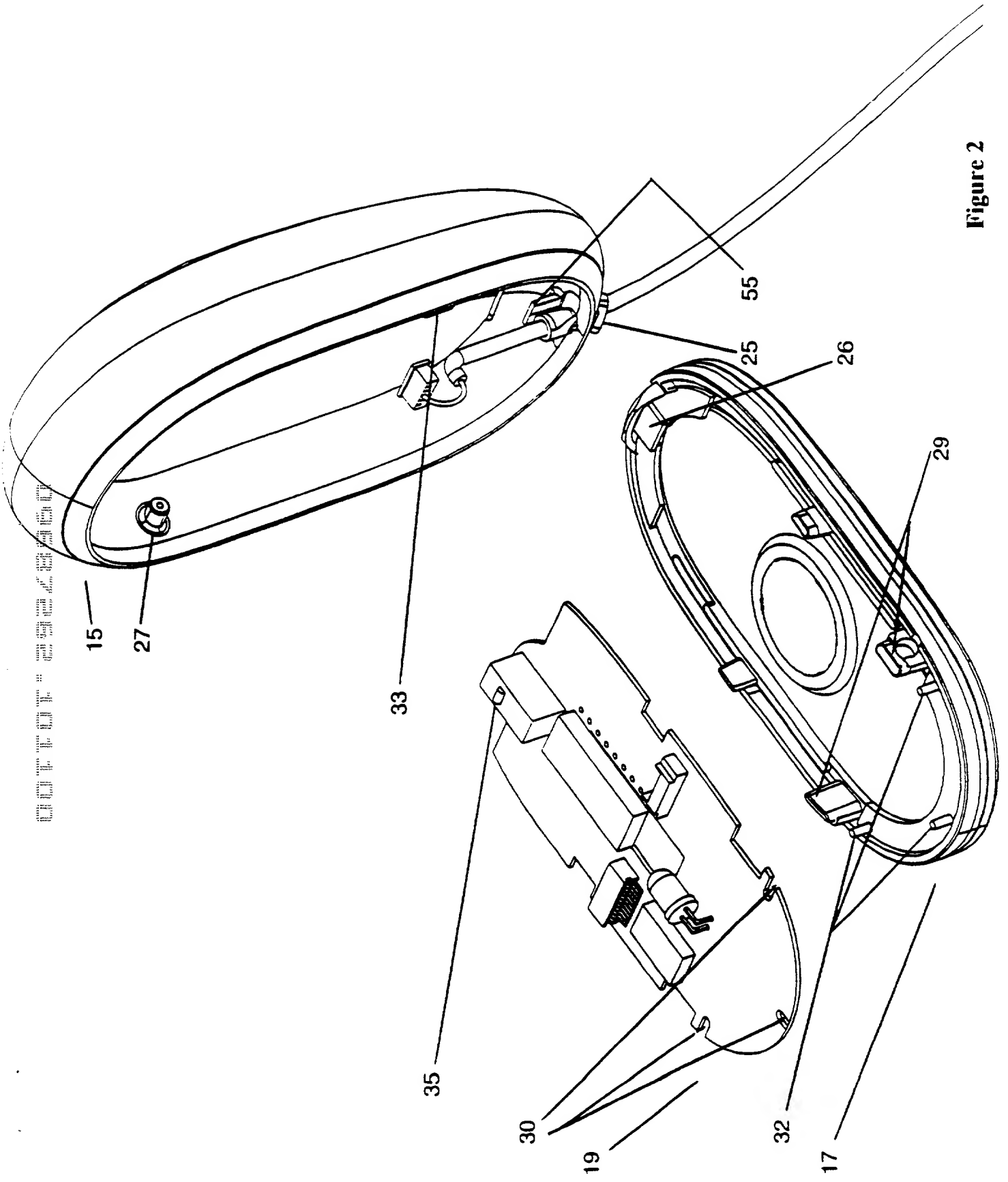


Figure 2

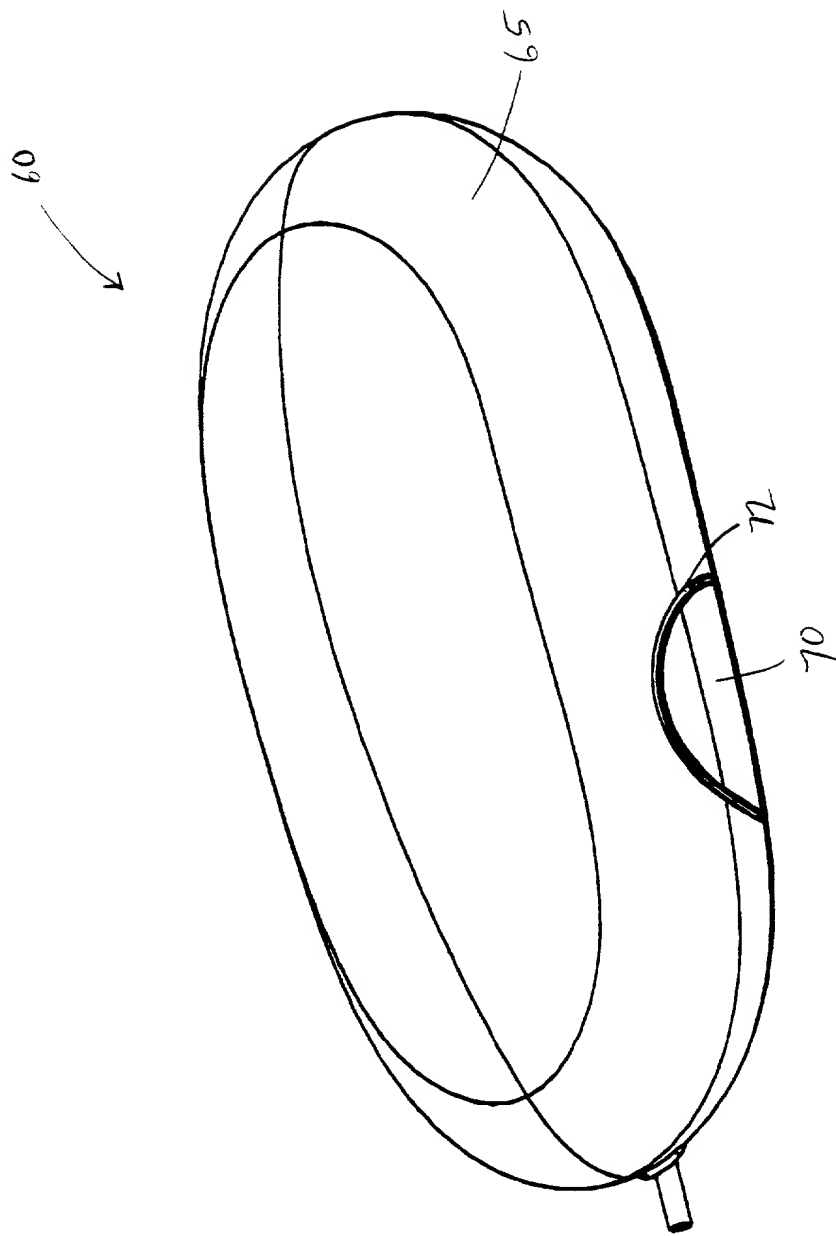


FIG. 3A



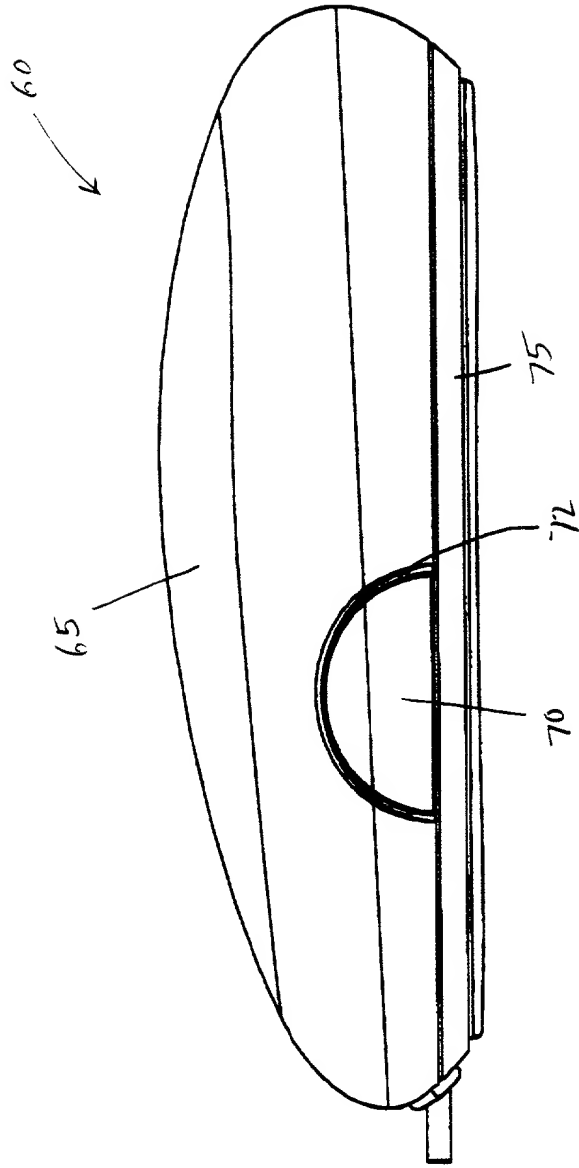


FIG. 3B

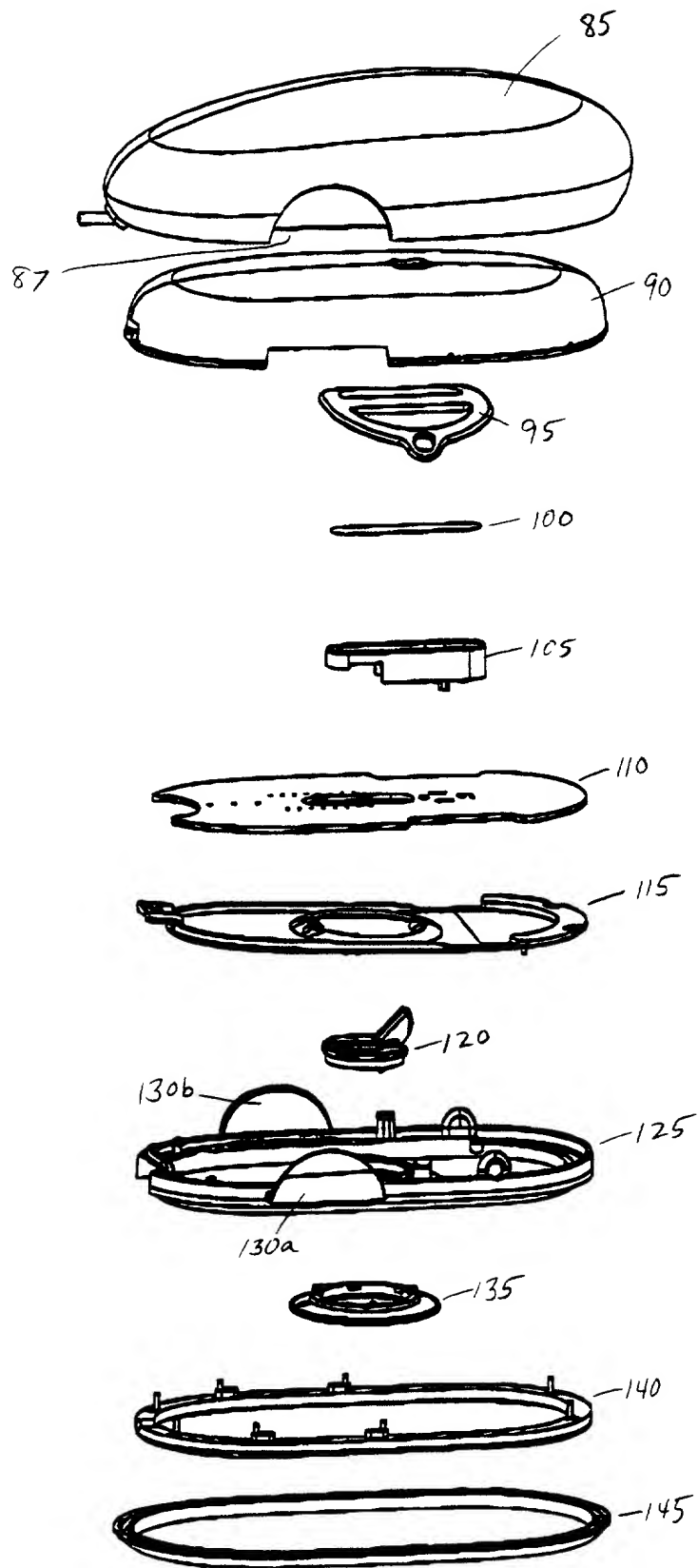


FIG. 4

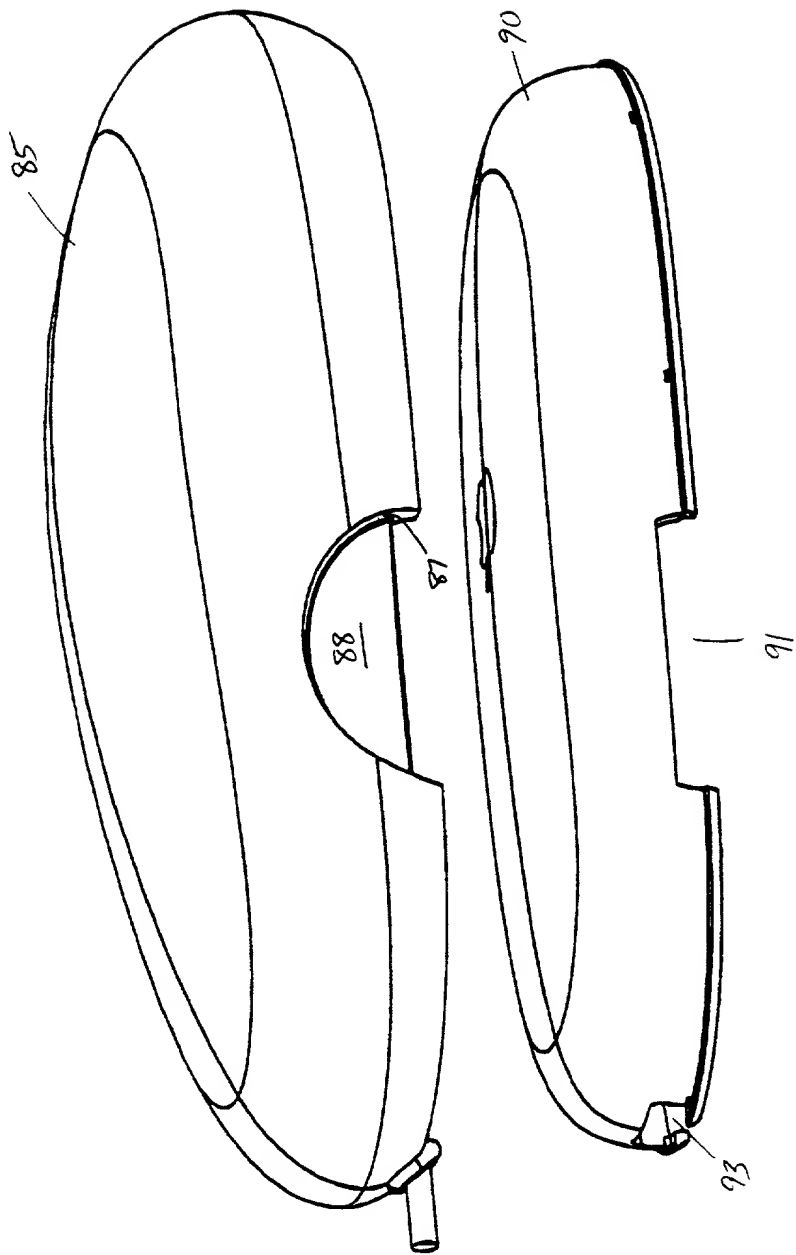


FIG. 5

FIG. 10

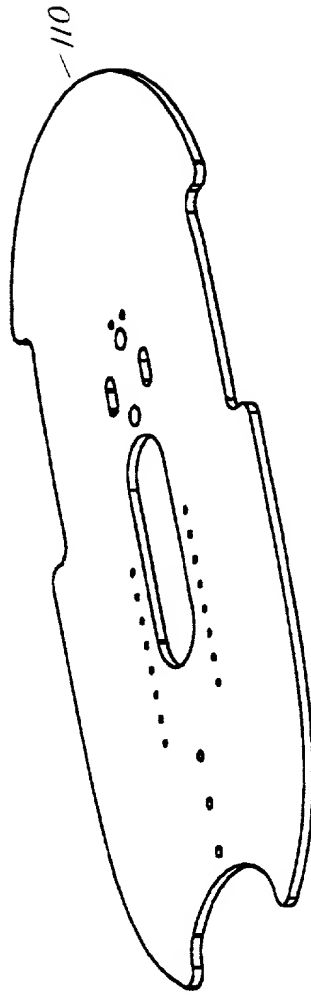
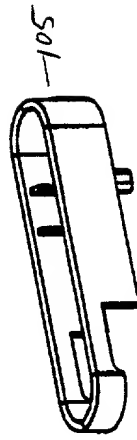
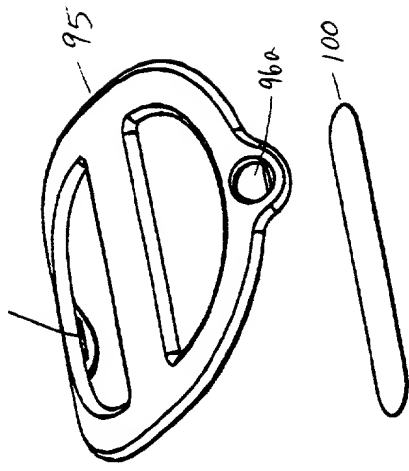
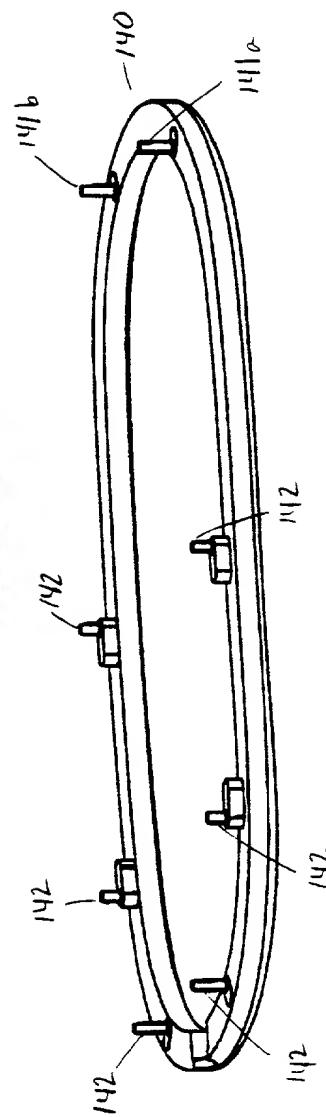
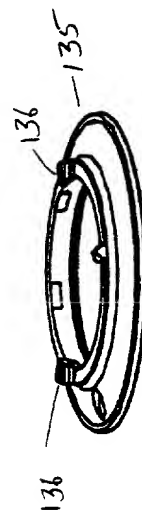
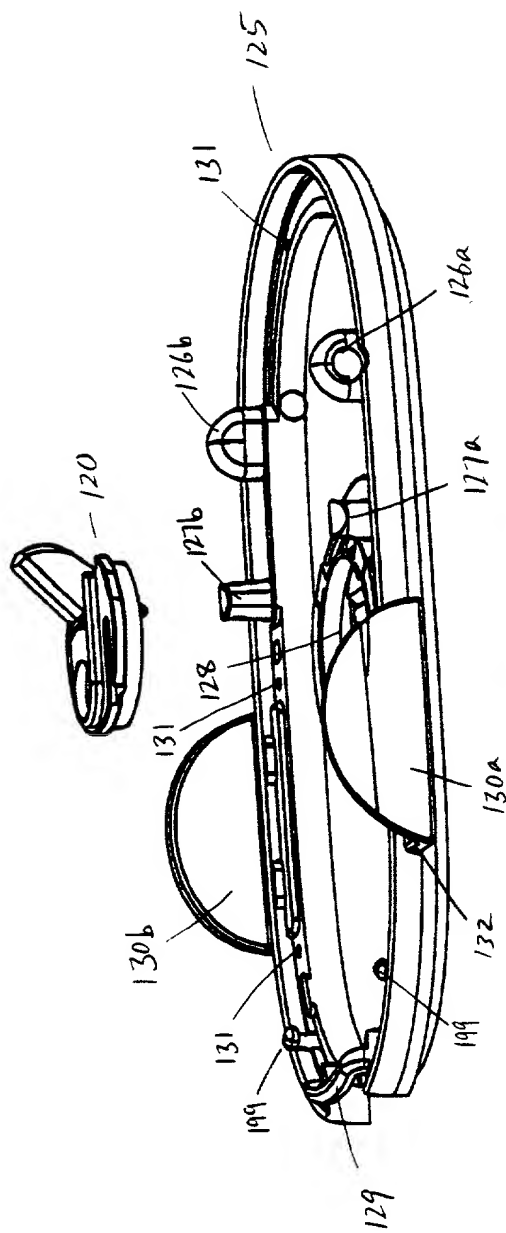
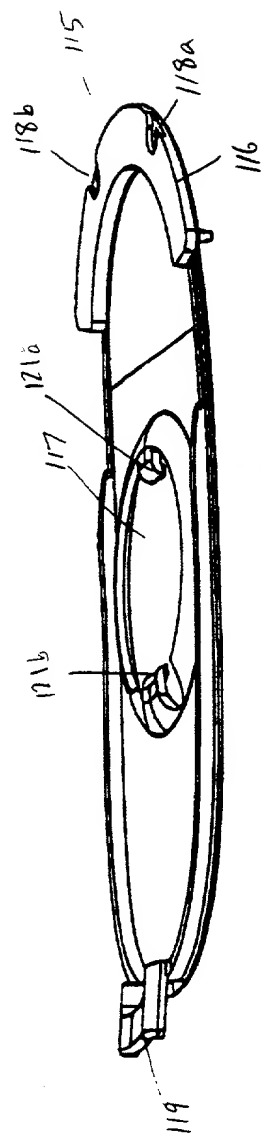


FIG. 13



Attorney's Docket No.: 004860.P2525X

PATENT

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION  
(CONTINUATION-IN-PART)

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name.

I believe I am the original, first, and sole inventor (if only one name is listed below) or an original, first, and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled COMPUTER MOUSE HAVING SIDE AREAS TO MAINTAIN A DEPRESSED BUTTON POSITION

the specification of which

X is attached hereto.  
\_\_\_\_\_ was filed on \_\_\_\_\_ as  
United States Application Number \_\_\_\_\_  
or PCT International Application Number \_\_\_\_\_  
and was amended on \_\_\_\_\_  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

<u>Prior Foreign Application(s)</u>			<u>Priority Claimed</u>	
<u>(Number)</u>	<u>(Country)</u>	<u>(Day/Month/Year Filed)</u>	<u>Yes</u>	<u>No</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

I hereby claim the benefit under title 35, United States Code, Section 119(e) of any United States provisional application(s) listed below:

_____	_____
Application Number	Filing Date
_____	_____
Application Number	Filing Date



## APPENDIX A

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## APPENDIX B

### Title 37, Code of Federal Regulations, Section 1.56 Duty to Disclose Information Material to Patentability

(a) A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. The duty to disclosure information exists with respect to each pending claim until the claim is cancelled or withdrawn from consideration, or the application becomes abandoned. Information material to the patentability of a claim that is cancelled or withdrawn from consideration need not be submitted if the information is not material to the patentability of any claim remaining under consideration in the application. There is no duty to submit information which is not material to the patentability of any existing claim. The duty to disclose all information known to be material to patentability is deemed to be satisfied if all information known to be material to patentability of any claim issued in a patent was cited by the Office or submitted to the Office in the manner prescribed by §§1.97(b)-(d) and 1.98. However, no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. The Office encourages applicants to carefully examine:

(1) Prior art cited in search reports of a foreign patent office in a counterpart application, and

(2) The closest information over which individuals associated with the filing or prosecution of a patent application believe any pending claim patentably defines, to make sure that any material information contained therein is disclosed to the Office.

(b) Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

(c) Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

(1) Each inventor named in the application;

(2) Each attorney or agent who prepares or prosecutes the application; and

(3) Every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application.

(d) Individuals other than the attorney, agent or inventor may comply with this section by disclosing information to the attorney, agent, or inventor.